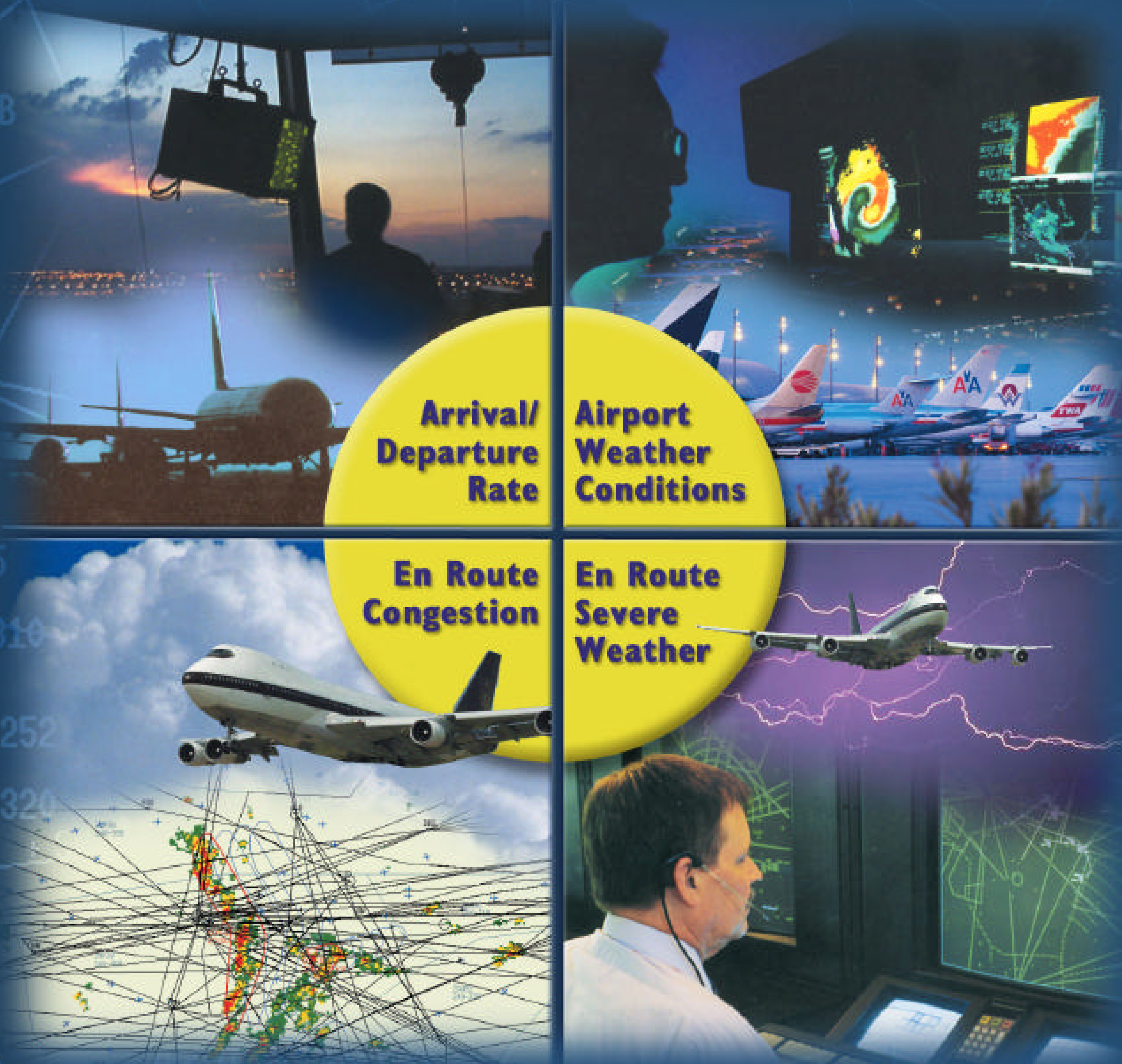


NATIONAL AIRSPACE SYSTEM
OPERATIONAL EVOLUTION PLAN

A Foundation for Capacity Enhancement 2003–2013

EXECUTIVE SUMMARY

December 2002
Version 5.0

U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of the Administrator

800 Independence Ave., S.W.
Washington, D.C. 20591

December 2002

Dear Members of the Aviation Community:

I am delighted to present the Federal Aviation Administration's (FAA's) Operational Evolution Plan (OEP), Version 5.0. The OEP continues to represent FAA's commitments for improving capacity and efficiency in the National Airspace System over the next ten years. These commitments have been generated in consultation with the leadership of the aviation community and in partnership with the Department of Defense and the National Aeronautics and Space Administration.

As you can see in this Executive Summary, these joint efforts are moving forward and we are making progress clarifying user needs and putting in place new technologies and new procedures to address those needs. We are already realizing the benefits of increased system capacity and efficiency as a result.

This past year has been a difficult one for our nation and for the aviation community. The flying public has had to adapt to new security activities. The aviation community has had to adapt to a tightening economic climate. When the volume of air traffic comes back, and it will, we will be ready with an advanced and flexible system that provides more choices to airlines, industry and the flying public.

This version of the OEP balances program progress with a crisper vision that emphasizes collaborative decision making, required navigation performance and shared information systems. This is particularly fitting as we approach the fifth anniversary of the National Civil Aviation Review Commission, created by the United States Congress. As a result of the commission's recommendations, it is apparent through the OEP how the FAA sets priorities and achieves performance outcomes, while accelerating user benefits and assuring that resources are sufficient and used effectively. I invite you to read more details at the OEP web site: www.faa.gov/programs/oep.

Thank you for your continued support, active participation and dedication to aviation.

Marion C. Blakey
Administrator

SNAPSHOT OF VERSION 5.0

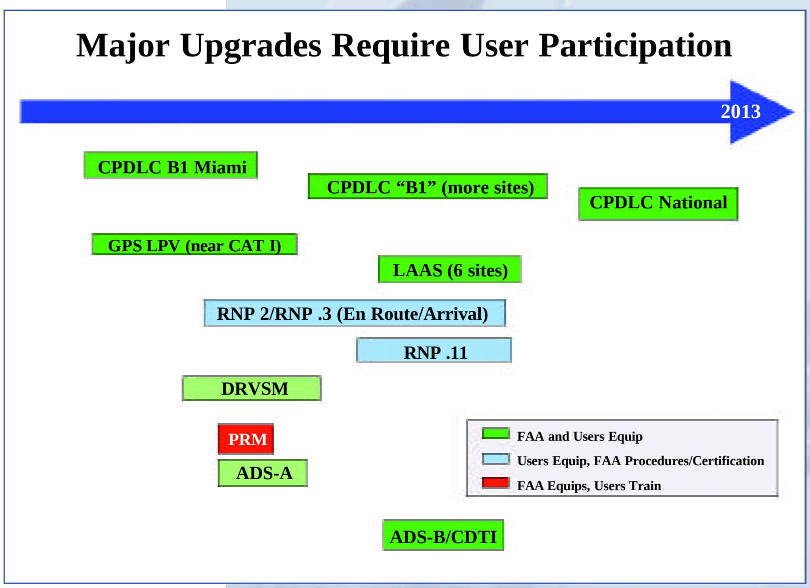
Introduction

The Operational Evolution Plan (OEP) is the Federal Aviation Administration's (FAA's) rolling ten-year plan to increase the capacity and efficiency of the National Airspace System (NAS) while enhancing safety and security. The commitments and decisions in the OEP have emerged from a close collaboration with the entire aviation community, including the airlines, cargo carriers, airports, manufacturers, general aviation, the Department of Defense (DOD), the National Weather Service, and the National Aeronautics and Space Administration, all with a focus on the air transportation services delivered to the flying public.

The OEP represents the agreements and commitments of the FAA, DOD and the aviation community to modernize the NAS and solve problems in core areas, or quadrants: Arrival/Departure Rates, En Route Congestion, Airport Weather Conditions, and En Route Severe Weather.

The tragic events of September 11, along with a depressed U.S. economy have significantly impacted the airline industry. Overall, the number of airport operations during 2002 was about 10 percent below 2000 levels, and the number of en route operations during 2002 was about five percent lower than 2000 levels. While traffic has recovered more rapidly at Midwest airports than on the East and West coasts, airports that consistently demanded attention in the past continue to do so and as the economy improves, we fully expect that the demand for aviation services will increase to pre-September 11 levels. In fact, one aspect of the demand for aviation is already affecting operations; namely, airlines are continuing to increase usage of smaller aircraft, including regional jets, adding to already complex traffic flow management in many areas across the nation.

For these reasons, we are staying the course to build an aviation system for the 21st century with efficiency and capacity improvements needed to meet the growing demand for air travel and cargo shipment. At the same time, we have taken into account the current economic climate by providing increased clarity about avionics requirements that build on existing equipage. Version 5.0 of the OEP captures commitments and investments across the aviation community and presents key accomplishments, activities and policy decisions that the community has reviewed and advocated through a process established by RTCA, the standards-setting association for the aviation community.



REPORT CARD OF THE OEP

State of the Evolution

To date, the aviation community has realized the following operational improvements set forth in the OEP:

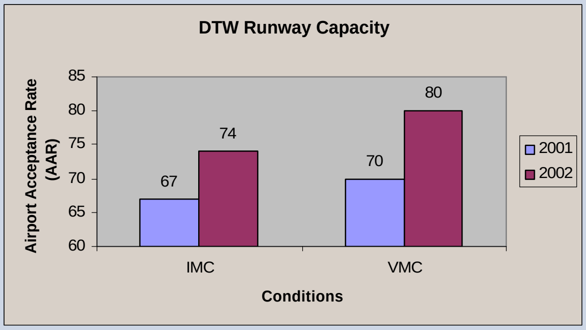
- ***Increased arrival and departure rates***
  - New runways have been constructed at the Phoenix and Detroit airports
  - All choke point actions are complete
  - The Traffic Management Advisor (TMA) is operational at seven sites
  - New and overlay area navigation (RNAV) routes have been implemented
  - The Administrator's Policy on Required Navigation Performance (RNP) has been implemented
  - Las Vegas implemented the four corner post airspace redesign
- ***Decreased en route congestion***
  - All choke point actions are complete
  - The User Request Evaluation Tool (URET) is now operational in six centers
  - The Controller Pilot Data Link Communications (CPDLC) Build 1 tool is in use at Miami Center
  - There are more web-based collaborative tools and better quality data for managing congestion
  - Gulf of Mexico RNAV routes have been implemented
- ***Improved flight during unfavorable airport weather conditions***
  - Installed Precision Runway Monitor (PRM) at Minneapolis-St. Paul and Philadelphia airports, and operationally validated benefits
  - The first production unit of the Integrated Terminal Weather System (ITWS) is in use at Atlanta
  - Runway Visual Range data is now provided to users via Collaborative Decision Making Network (CDMNet) and available to more than 49 airports
  - Precision approaches Instrument Landing System (ILS) has been implemented at 14 airports
- ***Improved flight during severe en route weather conditions***
  - Ground delay programs are being executed with improved compliance
  - The Collaborative Convective Forecast Product (CCFP) extended range forecast of thunderstorms is available on the Command Center Website
  - The Playbook has been expanded to 114 plans to provide more options
  - Weather radar data is now available on en route controller's display
  - The Flow Evaluation Areas (FEA)/Flow Constrained Areas (FCA) Collaborative Routing Coordination Tools (CRCT) prototype functions have been implemented on the Enhanced Traffic Management System (ETMS).
  - Implemented Virginia Capes (VACAPES) agreement on use of east coast warning area airspace for hazardous weather avoidance

Each of these initiatives increased the capacity and efficiency of the NAS, and has provided direct benefit to NAS users. Many of these represent the initial installment of a longer-term plan or water fall.

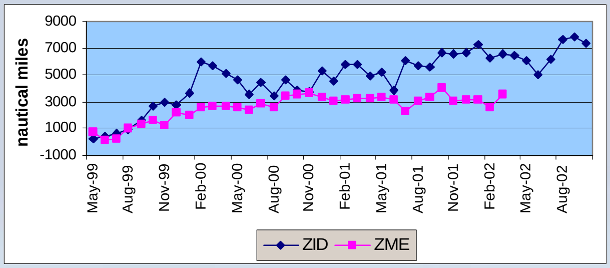
Overview of 2002 Performance Results

Overall, capacity at the OEP airports has increased over 2% since OEP inception. Although decreased demand levels did influence overall peak throughput in 2002, the peak visual throughput index at 15 of the 34 airports studied (or nearly 45%) were higher than in 2000. Compared to the OEP baseline year 2000, delays have fallen by approximately 30%, while traffic volume changes have varied throughout the NAS, ranging from 5% at the en route centers to approximately 15% at the pacing airports.

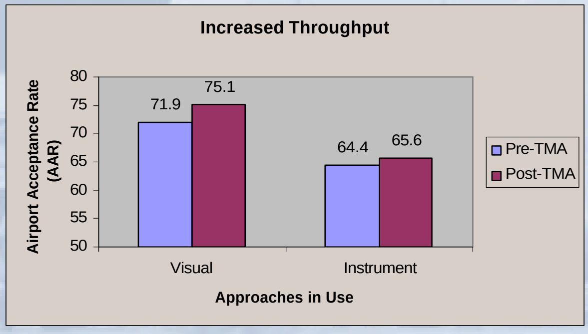
- The Detroit runway became operational December 11, 2001. By Spring 2002, the Airport Capacity Visual Meteorological Conditions (VMC) index (representing the available capacity) was up 16%, and Airport Throughput VMC index (representing what was serviced on average during the peak of arrivals and departures) was up about nine percent.
- Forty RNAV routes have been completed.
- Las Vegas implemented the Four Corner Post Airspace Redesign in December 2001. Las Vegas became the first major airport to use RNAV arrival and departure procedures for all runways. Preliminary results confirmed predictions of significant user savings.
- All choke point actions were implemented. By August 2001, with over 70% of the action items completed, an interim analysis showed performance improvement in five of the seven choke points, equating to approximately $38M in cost savings to aviation system users. Traffic reduction after the September 11, 2001 terrorist attacks has made it difficult to show the system impacts of the completed action items. However, in Great Lakes en route airspace where traffic has rebounded to pre-September 11 levels, the actions resulted in impressive reductions in delay (15%-40%, depending on the choke point).
- URET has allowed restriction removals and lateral amendments have saved approximately 7000 nautical miles (nmi)/day at Indianapolis and 3500 nmi/day at Memphis.
- Chokepoint actions, CDM and URET together allowed the maximum hourly occupancy in the Midwest centers (Cleveland, Indianapolis and Chicago) to reach 102.5% of the 2001 levels.
- The TMA is in use at seven centers supporting arrival metering and merging. Three sites (Dallas, Minneapolis, and Los Angeles) experienced a five percent increase in throughput, and Denver experienced a two percent gain.
- PRM in Minneapolis provided an increase in arrival rates of six percent or better, which equates to four more flights per hour, while in operation. Operations have since been suspended, however the FAA is working to reestablish operations.



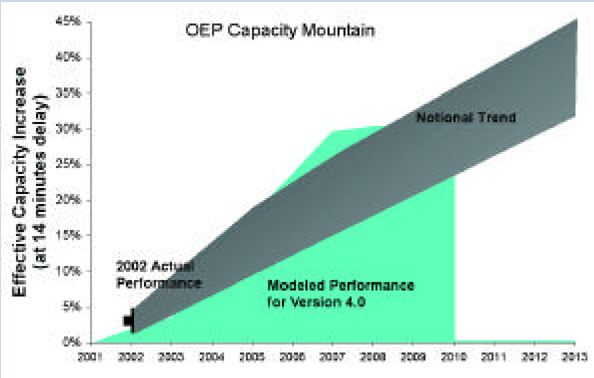
Detroit Runway Capacity Gains



URET Distance Saved for Lateral Amendments Daily Average



Increased Throughput from TMA at Minneapolis



Modeled capacity gains for Version 4.0 and anticipated trends from Version 5.0

Capacity Expectations

The OEP Capacity Growth Chart projects the cumulative modeled capacity gains from OEP commitments. We are moving in a positive direction and have met our projections for 2002. The near term projections reflect significant capacity growth as a result of Reduced Vertical Separation Minima (RVSM), airspace redesign, and several new runways that will be put into service over the next two years. We also will continue to add more URET and ITWS sites, and a number of other capacity enhancements.

Capacity projections for the out-years will increase since two runways and four TMA sites were added as part of Version 5.0. Also impacting projected growth will be a number of programs that are planned, including 10 more proposed runway projects at benchmark airports, a focused effort to promote various airport initiatives (improvements to airports such as runway and taxiway enhancements), RNP, and significant enhancements to the current Collaborative Decision Making (CDM) philosophy. On the negative side, the expected gains will be diminished by the Charlotte runway that was dropped due to the local situation. In addition, some of the projected gains will slide to the right as two runways were delayed (ATL and SEA), also due to local situations. Furthermore, CPDLC has been delayed due to various difficulties. During 2003, the capacity mountain will be recalculated once the airport benchmarks and the terminal area forecasts are updated.

This year, we closed two solution sets: Reduce Offshore Separation and Provide Access to Special Use Airspace (SUA). Reduce Offshore Separation is closed because the technology solution could not be achieved and no viable alternatives are currently available; other activities involving the Gulf, such as RVSM and RNAV routes, are in other solution sets. The SUA solution set is closed because the milestones were successfully completed. Some initiatives involving "access" are in other solution sets, while others are part of ongoing activities not related to OEP. Neither of these solution sets contributed to the capacity mountain assumptions. In addition, new smart sheets have been added for airport weather to capture wake mitigation and along track separation procedures.

2002 Experiences from the Evolution

During good economic times, real change happens slowly with significant preplanning and coordination. Under the current circumstances, uncertainty in timing and in some cases even the viability of the industry partners make coordination and commitment more complicated. Despite the FAA's best efforts to achieve and retain a Government and industry commitment for the OEP implementation, the outlook for significant, partnered investment is dimmed by growing security costs and airline industry restructuring. With version 5, many plans for new runways, equipage of aircraft, and participation in new procedures are under review. Examining which 2002 accomplishments went smoothly, and discovering what created the difficulties in others, should improve the community's ability to manage the OEP implementation in spite of these uncertainties.

Ground based capabilities and joint activities that were in development for several years (e.g., CPDLC trials), generally had minor disconnects that were resolved in the routine course of implementation. In some cases, technology failed to deliver the operational change in a cost effective way, e.g., Gulf of Mexico communications, so new strategies were adapted. The greatest difficulties came from changes affecting both flight planning and pilots and controller training, e.g., PRM and LAS redesign. The implications of the transition of LAS to an all RNAV airport was not well understood, and the resulting mixed operational practices created chaos. Much was gained from this experience which validated the significant benefits that would follow these changes. With the successful conclusion of the System Choke Points Program, the FAA has embarked on an initiative with the RTCA's Free Flight Select Committee's Airspace Working Group to engage aviation users and stakeholders on a regular basis, producing a consensus view of airspace priorities and aligning resources with those priorities.

Where equipage had been preplanned, the community has re-entered the planning stage. Plans for cockpit display procedures and CPDLC moved forward in 2002, but it became clear that any solid plans are still a few years away.

Axiomatic to the OEP is the concept that benefits are realized by users who equip with new technology and change their operations to reflect new ATC techniques. Over the past 18 months, it is clear that demand and therefore equipage is highly elastic. In out-year research efforts, the FAA committed to significant user equipage costs. This strategy, used in the Safe Flight 21 project, enabled concept validation and benefit determination.   In contrast, Controller Pilot Data Link Communications that relies on airlines to bear the cost of equipage is unable to move forward with national implementation until a critical mass of aircraft equip and controller workload is reduced. Furthermore, the challenge is circular: a benefit must exist to support industry investment but the benefit depends on user equipage.

Another complex, circular issue surrounds the certification of ground-based and avionics systems. In the past, certification dealt principally with aircraft equipment. The OEP requires a closer interoperability of ground and air-based systems. This in turn drives the need for a true systems-level engineering analysis and allocation of safety validation across these systems and therefore, government and industry boundaries. As a community we have begun this process within RTCA's Concept of Equipage and OEP Working Group efforts. However, to detail a true evolutionary implementation, we must derive a compelling cost benefit across the community with frequent re-evaluation as we encounter the inherent challenges of complex systems development.

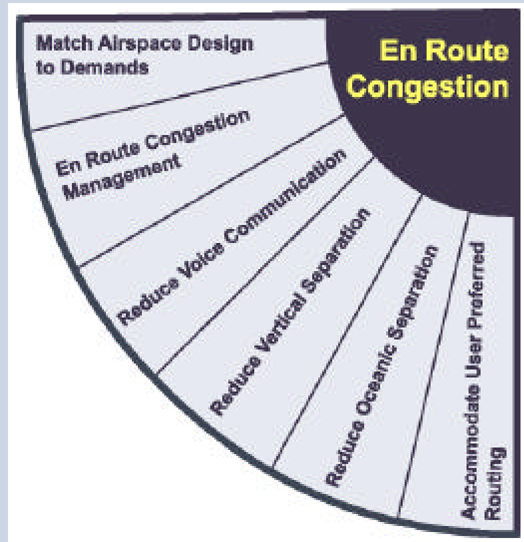
Community Challenges

The OEP was established to coordinate community efforts to expand the capacity and improve the efficiency of the NAS. Routine discovery of community challenges is a natural part of this endeavor. In most cases, identified challenges are resolved so the community can adhere to the original plan. In other cases, the challenge will require a change in strategy with the focus remaining on the original objective. For example, this year's efforts to complete voice communications in the Gulf of Mexico would have enabled domestic non-radar procedures for that airspace. When technological failures precluded this plan, we looked to other procedures to support the original goal of achieving greater capacity in the Gulf of Mexico.

A wide range of challenges face the community implementation efforts in the coming year. Prepared with the lessons learned from the 2002 experiences, the FAA will work with the community for a successful OEP implementation. The most significant challenges are listed below. These complex issues will require leadership and greater industry stability than exists today. In some cases leadership will be governmental and in others industry is better suited for the role. Working with RTCA, the FAA remains optimistic that these issues will be resolved in the best interests of the flying public and the nation's economy.

- **RNP Standards and Flyability:** In 2003, the FAA will publish criteria for RNP-2 and RNP-0.3. This step is only the beginning of the effort to develop flyable routes for cruise, arrival and departure. From the experience gained in developing RNAV routes, the community now understands the coordination of vendor and user data, plans for training, and other issues involved to avoid the need for rework of airspace designs and procedures.
- **Reestablishing PRM Operations:** PRM Operations were suspended in Minneapolis following a reevaluation of safety implications in a mixed environment of participants and non-participants; however, the operational application was successful. The FAA is coordinating a proposal to resume operations with users.
- **New Runway Surveillance:** New runways are being built at less than standard spacing. Funding and surveillance needs to support parallel operations at these airports are unresolved.
- **Crossing Procedures:** Procedures to address crossing runways require joint FAA industry acceptance.
- **Unified Surface Approach:** Several airports and users have programs underway to improve surface coordination. At the same time the FAA is trying to establish a national approach for traffic management use.
- **CPDLC National Deployment:** Economics will slow the pace of equipage. The FAA has cost issues with certification.
- **Integrated Community Schedule:** Some joint deadlines were missed due to unilateral priority changes without informing others.

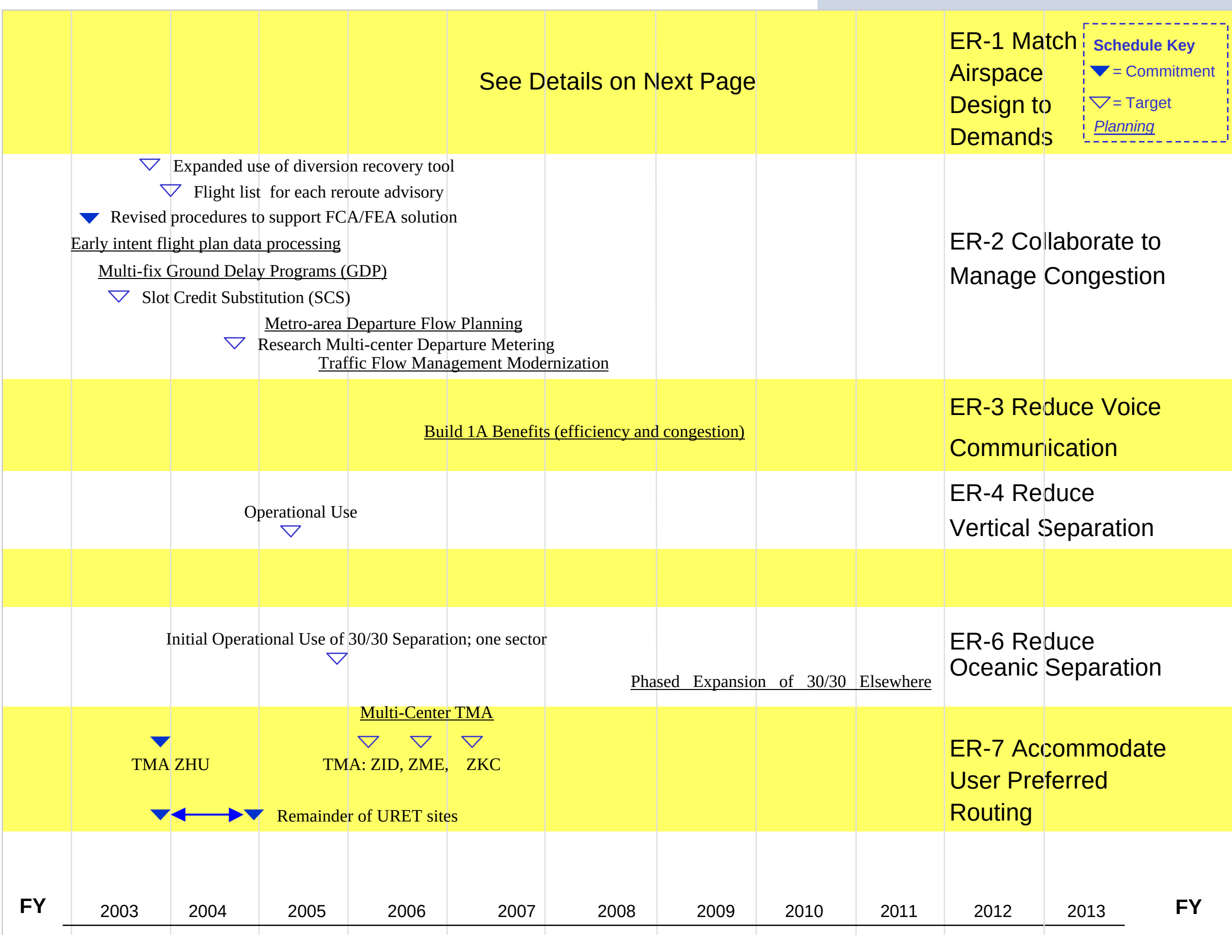
OVERVIEW OF VERSION 5.0



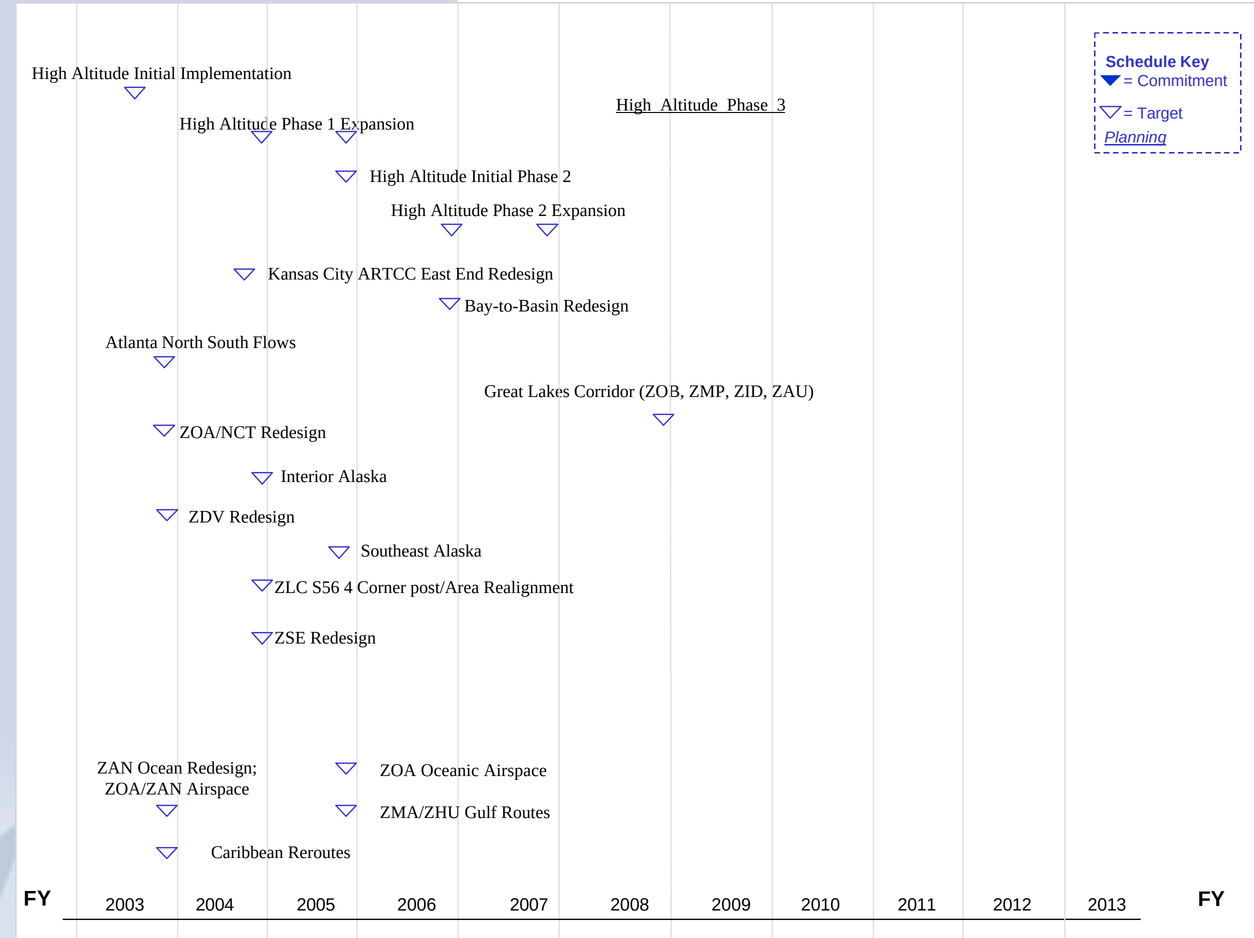
En Route Congestion

In the en route arena, capacity and efficiency are governed by airspace design, flow planning practices, separation standards and controller workload. Airspace design changes are being made both in the short and long term to fit sectors to the traffic demand and to establish more effective airspace structures in the long run. The long term plans include routes based in RNP of the aircraft. The transition to collaborative decision making and "system thinking" will change flow planning practices to better match available capacity to the demand. Domestic Reduced Vertical Separation Minima (DRVSM) will reduce vertical separation standards from flight level 290 to flight level 410 within the NAS including Alaska and the Gulf of Mexico. Horizontal separation standards of 30 miles are planned in the Oceanic airspace. Controller pilot data link communications along with tools for accommodating and managing user plans and requests (URET and TMA) will assist controllers in managing the forecasted increase in demand.

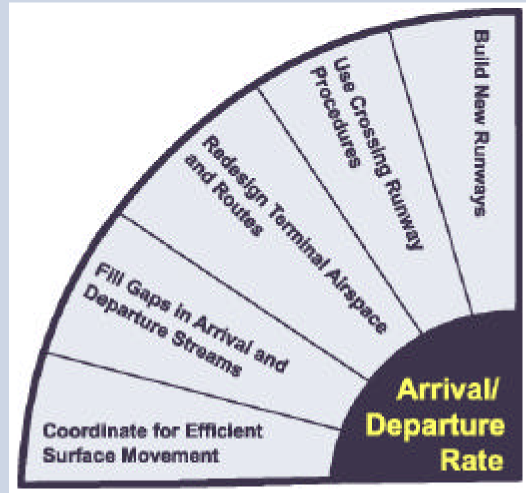
En Route Congestion Quadrant Timeline



ER-1 Match Airspace Design to Demands

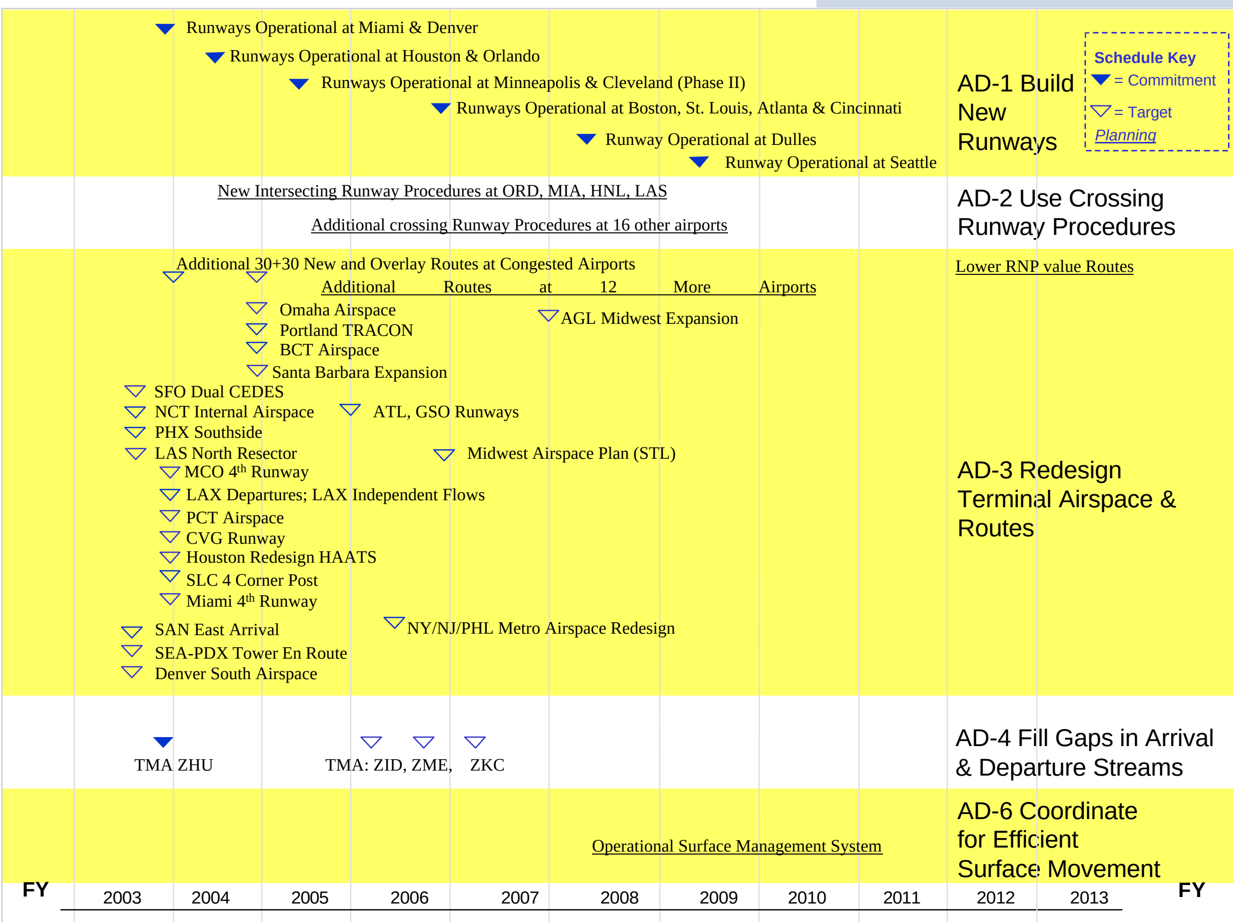


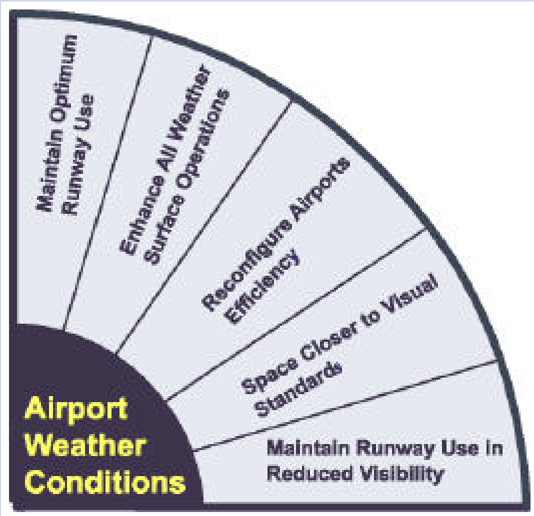
Arrival/Departure Rates



There are two main strategies to help airports meet peak demand: build new runways and maximize the use of existing runways. New runways can increase the capacity and efficiency of an airport, but may take 10 years to plan, construct and commission. Currently, the OEP includes 12 runways planned at benchmark airports. A combination of air traffic procedures, new technologies, improved airspace design, surface management, and decision support tools are proposed to make better use of existing runways. Procedures will be evaluated for crossing runway configurations at 18 benchmark airports. Terminal airspace redesigns, planned for most of the benchmark airports and metro areas are aimed at improving the transition of arrivals and departures. Traffic management advisory tools which help in managing the arrival stream will become operational at an additional four sites. Also the multi-center capability will be evaluated in the Philadelphia area. Surface management systems are being explored for operational use later in this decade.

Arrival/Departure Rates Quadrant Timeline

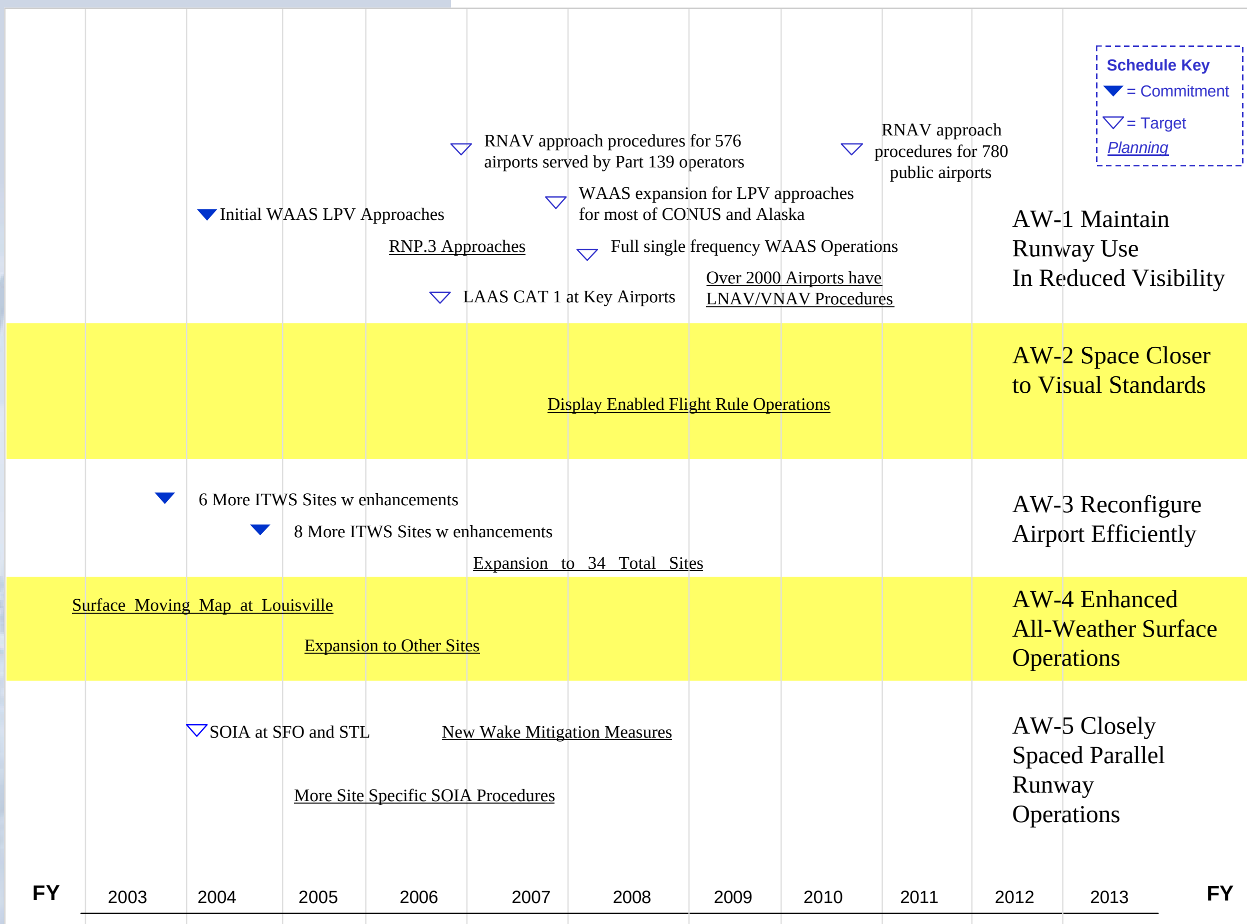




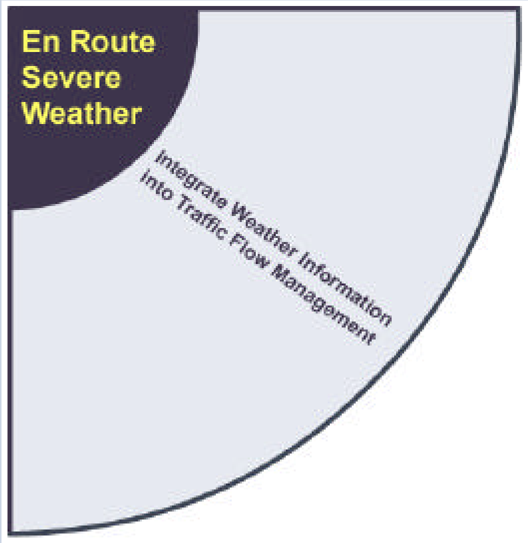
Airport Weather

For the benchmark airports, inclement weather operations lower arrival and departure rates an average of 18 percent. As weather or visibility degrades, runway use may become limited and spacing between aircraft is increased. To make airport operations less sensitive to weather, we need more options for runway configurations and more consistent spacing of operations, much of which requires new technologies. With RNP and improved navigation means, precision approaches become available at more airports. A variety of procedures including wake-mitigation, offsets and along track separation, and flight monitoring allow operations to increase on closely spaced parallel runways as bad weather moves in. Cockpit Display of Traffic Information may enable visual approaches to continue into marginal visual flight rules conditions. A moving map display may also help with improved surface situational awareness.

Airport Weather Quadrant Timeline

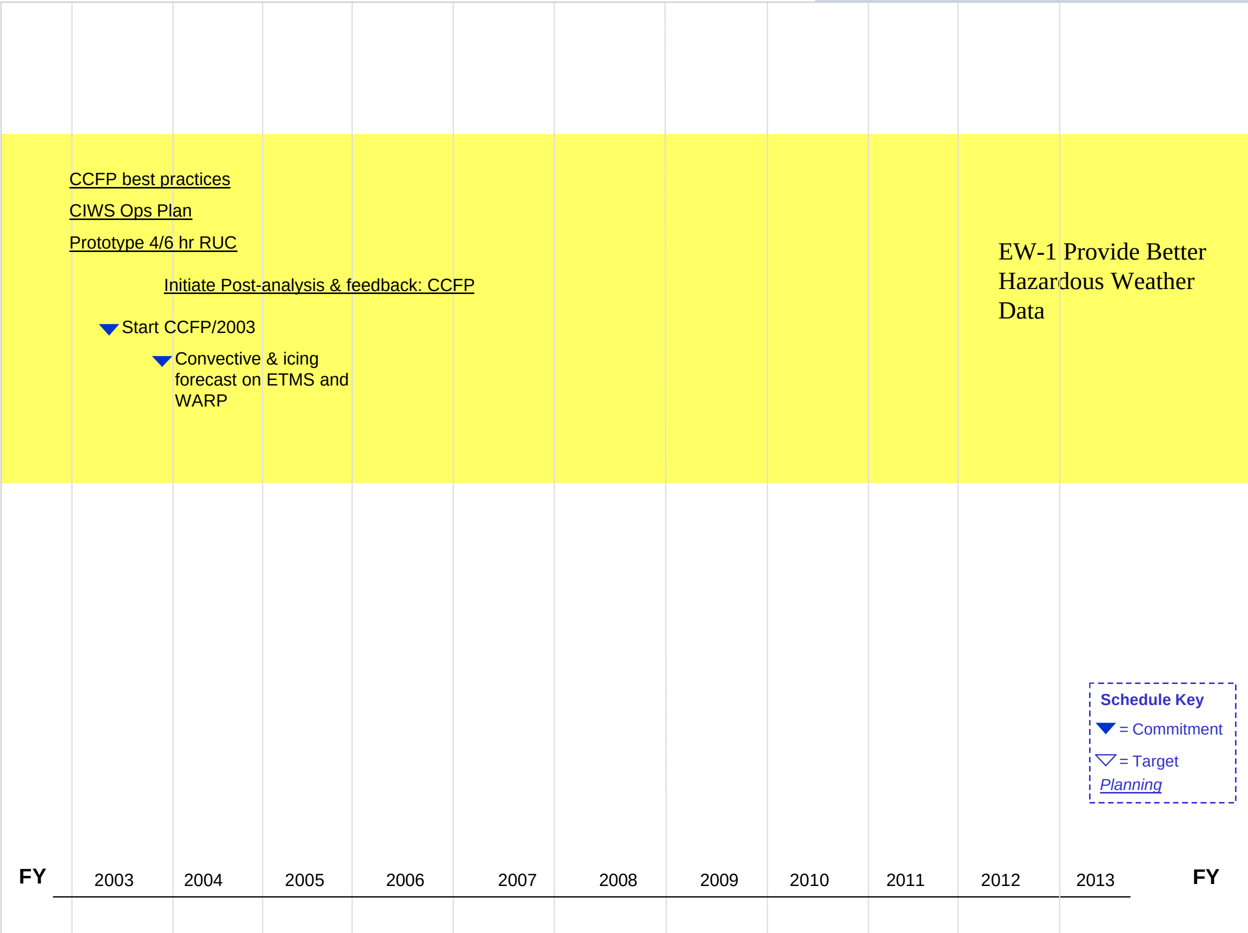


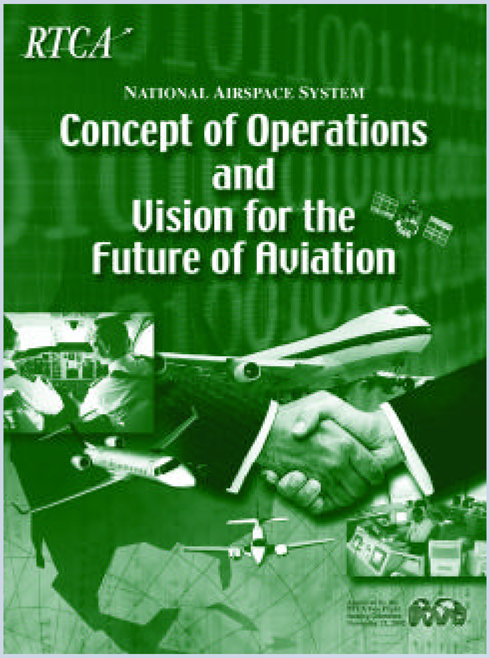
En Route Severe Weather



In fiscal year 2002, over 70 percent of delays were attributed to restrictions due to weather. These results are typical of recent years. Improving forecasts, sharing real-time data and the application of weather information to traffic management planning, as well as integrating weather information into decision support systems will mitigate weather related delays. The disruptions caused by hazardous en route weather are magnified by the uncertainty in the location, movement and severity of the weather conditions. Forecast accuracy is not well suited to the strategic planning of traffic flow decisions. Joint planning is further hindered by limitations in real-time data sharing capabilities. Operational decision making by airlines and traffic flow managers will be improved when common awareness of the situation and a methodology to mitigate the impact are coupled with the improved data exchange, training for interpretation of forecasts, and the coordination processes.

En Route Severe Weather Quadrant Timeline





RTCA's concept of operations is the OEP foundation.

VISION

Guiding Vision for the OEP

In the future, the NAS will become a technology-intensive, but human-centric information system that supports reliable real-time decision making. As the vision evolves, the OEP will detail the tactical, community consensus commitments that will implement the system. Currently, the conceptual foundation for this vision is contained in the Future Concept of Operations, a government-industry strategic look at the NAS published by RTCA.

Technological advances and procedural improvements, driven by use of satellite navigation tools and procedures like RNP, will permit flexible airspace designs, more routing options, an increase in the number of flights that can safely operate in a given airspace and an increase in access to airspace. This allows a shift from standard operations tied to the performance of ground-based systems to operations tailored for aircraft system performance.

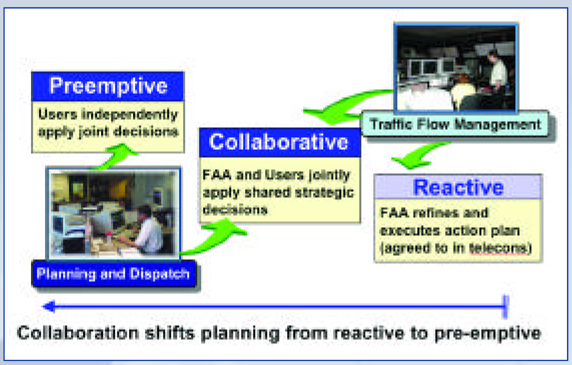
Airports will have new capabilities as well. Along with new runways at some of the busiest locations, more airports will be equipped to operate in a wider range of weather conditions and increase use of parallel runway operations, reducing the need for flight restrictions. All this will occur with the introduction of new and expanded operations: differences in airports, demographics, changes in fleet mix including new types of aircraft (e.g., unmanned vehicles); and wider use of general aviation, regional, and business aircraft.

Shared and secure information is the hallmark of the future. New technologies now in testing, others in the research stage, and some not yet imagined will enable more precise information in the air and on the ground. Increased use of satellite technology and digital data links, along with improvements in automation, will increase reliability and flexibility throughout the airspace system. This enhanced information and communications environment will not only improve efficiency, but support national defense requirements as well. Pilots, controllers and others will see the same information by way of integrated networks, leading to more complete and real-time sharing of situational awareness. As we increase the variety and utility of information available to pilots and controllers, passengers will benefit as well. The public will have access to much of the same information that the FAA and the airlines have on weather, air traffic, and airport conditions throughout the aviation system.

Shared information will improve daily collaborative decision-making between the FAA and airspace system users such as the airlines, general aviation, and military. Collaborative decision making has already eliminated thousands of hours of delays, improving efficiency and effectiveness. State-of-the-art decision support tools will systematically implement the rules of collaborative decision making and improve efficiency in all phases of flight.

In accomplishing all this, we will continue to strive for international consistency of procedures and systems to achieve what is called global harmonization.

The OEP is consistent with recent FAA acquisitions and policies, including: the Standard Terminal Automation Replacement System, En Route Systems Modernization programs, Advanced Technologies and Oceanic Procedures, and RNP criteria. These systems and procedures speed the introduction of new decision-support applications, improve the reliability of the operating systems, and allow the FAA and the user community to take full advantage of modern avionics. The OEP together with the infrastructure and safety NAS modernization efforts will conform to the priorities and support the national security mission.



Expanding opportunities for collaborative decision making

Looking Forward to Version 6.0

OEP Version 5.0 reflects the first complete post-September 11, 2001 look at the NAS and the adjustments made to the OEP. Though current economic conditions caused us to delay some initiatives, the OEP continues to reflect the maturing of procedures and new technologies. Specific implementation delays stem from financial difficulties and center around local uncertainty in a small number of airport runway programs, along with uncertainty about the timing of the airlines ability to equip their fleet to support OEP initiatives. However, we expect that air traffic, measured in terms of operations, will return to its pre-September 11th growth pattern between 2005 and 2007. As a result, we cannot deviate from our commitment to modernize the NAS and increase its capacity and efficiency.

With Version 6.0, the OEP will continue to respond to the changing operating environment and the financial condition of system users, as well as FAA funding uncertainties. This may ultimately require additional prioritization of activities.

As always, safety is of primary importance, and, in OEP Version 6.0, we will clearly describe the links between the OEP and the FAA's program for ensuring safety in the NAS. We will also describe the infrastructure initiatives needed to realize the OEP, and provide a clear path that ensures the timely availability of infrastructure components.

The FAA will continue to improve its efforts to integrate lines of business and decision making, and to become more performance driven. Schedules and data bases have been integrated to better manage resource contention generated by multiple commitments. A metrics plan has been added to Version 5.0 that details the measures that will be used to evaluate and understand the overall success of the OEP.

We also have laid the foundation for increased review and discussion of research that has the potential to provide capacity- and efficiency-enhancing solutions. Through the work of several groups across the aviation community, we will work to ensure that research assets are properly focused on solutions needed for the expansion of NAS capacity and improvement in NAS efficiency.

Finally, through renewal of our close collaboration with RTCA, we will work to improve the community's process for reviewing and commenting on OEP plans and commitments. Through our continued collaboration with industry, we will evolve the NAS in sensible and feasible ways to meet the needs of the aviation community and to achieve our mutual vision for aviation.

Acronyms

ADS	Automatic Dependent Surveillance
ARTCC	Air Route Traffic Control Center
ATC	Air Traffic Control
ATL	Atlanta Hartsfield Airport
ATN	Aeronautical Telecommunications Network
ATOP	Advanced Technology and Oceanic Procedures
BOS	Boston Logan International Airport
CAT I	Category One Landing
CAT II/III	Category Two/Three Landing
CCFP	Collaborative Convective Forecast Product
CDM	Collaborative Decision Making
CDMNet	Collaborative Decision Making Network
CDTI	Cockpit Display of Traffic Information
CEFR	CDTI Enhanced Flight Rules
CIW	Corridor Integrated Weather System
CLT	Charlotte/Douglas International Airport
CONUS	Continental United States
CPDLC	Controller Pilot Data Link Communications
CRCT	Collaborative Routing Coordination Tools
CVG	Cincinnati Airport
DFW	Dallas/Ft. Worth International Airport
DOD	Department of Defense
DRVSM	Domestic Reduced Vertical Separation Minima
DSP	Departure Spacing Program
DSR	Display System Replacement
EDA	En Route Dissent Advisor
EIS	Environmental Impact Statement
ETMS	Enhanced Traffic Management System
EWR	Newark International Airport
FAA	Federal Aviation Administration
FCA	Flow Constrained Area
FEA	Flow Evaluation Areas
FSM	Flight Schedule Monitor
GA	General Aviation
GDP	Gross Domestic Product
GSO	Greensboro Airport
HNL	Honolulu Airport
IAD	Washington Dulles International Airport
IAH	Houston Intercontinental Airport
ICAO	International Civil Aviation Organization
ILS	Instrument Landing System
ITWS	Integrated Terminal Weather System
JFK	New York John F. Kennedy International Airport
LA	Los Angeles
LAADR	Low Altitude Alternative Departure Route
LAAS	Local Area Augmentation System
LAHSO	Land and Hold Short Operations
LAS	Las Vegas McCarran International Airport
LDR	Limited Dynamic Resectorization
LGA	New York/LaGuardia Airport
LNAV	Lateral Navigation
MAMS	Military Airspace Management System
MCO	Orlando Airport
MEM	Memphis International Airport
MGDP	Multi-fix Ground Delay Program
MIA	Miami International Airport
MIT	Miles-in-Trail
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MSP	Minneapolis-St. Paul Airport
NAS	National Airspace System
NASA	National Aeronautics and Space Administration
NCT	Northern California Tracon
NPRM	Notice of Proposed Rule Making
NRP	National Route Program
NY/NJ/PHL	New York/New Jersey/Philadelphia
OEP	Operational Evolution Plan
OES	Operational Evolution Staff
ORD	Chicago O'Hare International Airport
PARR	Problem Analysis, Resolution, and Ranking
PBO	Performance Based Organization
PCT	Potomac Consolidation TRACON
PDX	Portland Airport
PETAL	Preliminary Eurocontrol Test of Air/Ground Data Link
pFAST	Passive Final Approach Spacing Tool
PHL	Philadelphia International Airport
PHX	Phoenix International Airport
PRM	Precision Runway Monitor
RNAV	Area Navigation
RNP	Required Navigation Performance
RPM	Revenue Passenger Miles
RTAP	Runway Template Action Plan
RVR	Runway Visual Range
RVSM	Reduced Vertical Separation Minima
SAN	San Diego Airport
SDF	Louisville Kentucky Statson
SEA	Seattle-Tacoma International Airport
SF	San Francisco
SFO	San Francisco International Airport
SLC	Salt Lake City Airport
SMS	Surface Management System
SOIA	Simultaneous Offset Instrument Approaches
STARS	Standard Terminal Automation Replacement System
STL	St. Louis International airport
SUA	Special Use Airspace
TAAP	Tactical Altitude Assignment Program
TFM	Traffic Flow Management
TMA	Traffic Management Advisor
TMNL	Traffic Management National Log
TRACON	Terminal Radar Approach Control Facility
UPS	United Parcel Service
URET	User Request Evaluation Tool
VACAPES	Virginia Capes
VMC	Visual Meteorological Conditions
VNAV	Vertical Navigation
WAAS	Wide Area Augmentation System
WARP	Weather and Radar Processor ARTCC
ZAB	Albuquerque ARTCC
ZAN	Anchorage ARTCC
ZAU	Chicago ARTCC
ZBW	Boston ARTCC
ZDC	Washington ARTCC
ZFW	Ft. Worth ARTCC
ZHU	Houston ARTCC
ZID	Indianapolis ARTCC
ZJX	Jacksonville ARTCC
ZKC	Kansas City ARTCC
ZLA	Los Angeles ARTCC
ZLC	Salt Lake City ARTCC
ZMA	Miami ARTCC
ZME	Memphis ARTCC
ZMP	Minneapolis ARTCC
ZNY	New York ARTCC
ZOA	Oakland ARTCC
ZOB	Cleveland ARTCC
ZSE	Seattle ARTCC
ZTL	Atlanta ARTCC